

A VALIDATION STUDY OF THE PERSONALITY SCHEDULE
OF THE ENTRANCE EXAMINATION FOR A
SPECIFIC SCHOOL OF NURSING

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by
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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
The Problem	1
Psychological Testing	2
The Nurse Testing Service	3
The Edwards Personal Preference Schedule	4
II. METHOD	7
Test-Retest	7
Rating by References	8
Rating by Instructors	9
III. DEVELOPMENT OF THE PROBLEM	10
Review of the Literature	10
Personality development	10
The post high school setting	13
A Specific Post High School Setting	15
The student body	15
Academic life	16
Student personnel services	17
The counseling program	17
IV. PRESENTATION OF THE PROBLEM	20
The Hypotheses	20
Proposed hypotheses	20
Discussion of the hypotheses	20

CHAPTER	PAGE
The Testing Tool	23
Data Gathering	28
Rating scales	32
Data Computation and Evaluation	32
Test-retest	32
Test-reference	35
Retest-instructor	36
Reference-instructor	38
V. CONCLUSION	40
Review of the Problem	40
Purpose	40
The testing tool	40
Adolescent development	41
Proposed hypotheses	42
Data collection and computation	42
Hypotheses Evaluation	43
Hypothesis I	43
Hypothesis II	44
Hypothesis III	45
Validity and reliability	45
Utilization of the Personal Preference Schedule.	45
Recommendations	47
BIBLIOGRAPHY	49
APPENDIX	52

LIST OF TABLES

TABLE	PAGE
I. Senior Student Population--Reference and Instructor Percentile Rating Scales	53
II. Junior Student Population--Reference and Instructor Percentile Rating Scales	54
III. Freshmen Student Population--Reference and Instructor Percentile Rating Scales	55
IV. Senior Student Population: Test-Retest Reference and Instructor Percentile Rating Scale Averages	56
V. Junior Student Population: Test-Retest Reference and Instructor Percentile Rating Scale Averages	57
VI. Freshmen Student Population: Test-Retest Reference and Instructor Percentile Rating Scale Averages	58
VII. Test-Retest Correlations	33
VIII. Percentage of Students with Retest Variations of Ten or More Percentile Points From Test . .	35
IX. Test-Reference Correlations	36
X. Retest-Instructor Correlations	37
XI. Reference-Instructor Correlations	39

LIST OF FIGURES

FIGURES	PAGE
1. Faculty Member Rating Scale	30
2. Character Reference Rating Scale	31

CHAPTER I

INTRODUCTION

Mercy Hospital School of Nursing in Des Moines, Iowa, subscribed to the Psychological Corporation's Nurse Testing Service. The Entrance Examination for Schools of Nursing provided the school with a scholastic aptitude profile and a personality characteristic profile on each examinee.

The Psychological Corporation Nurse Testing Service is one of two testing services which offer specific pre-entrance examinations for schools of nursing. The testing service used by Mercy Hospital School of Nursing is the least frequently used in the surrounding area. The applicant must come to a testing center and is charged a fee for the service. Due to the variety of examinations a student must complete as entrance requirements for various diploma schools of nursing, junior colleges and colleges, the question of using a specific pre-entrance examination arose. The faculty felt the difference was not in the assessment of scholastic aptitude, but rather the additional information offered in the personality profile. Therefore, how could this profile be used to the student's best advantage?

I. THE PROBLEM

The purpose of this study was to determine the

validity and reliability of the reported personality characteristics with regard to a specific group of nursing students. The resultant data was to be utilized in the guidance program of Mercy Hospital School of Nursing, Des Moines, Iowa.

II. PSYCHOLOGICAL TESTING

The assessment of personality characteristics is dependent upon methods which in many instances are relatively crude. Undoubtedly, the complex hereditary and environmental influences which mold each individual makes such assessment particularly difficult. Personality traits are demonstrated to the outside world through the behavior exhibited by the human being. Since behavior is controllable covert activities, in most situations the true personality trait may never be exposed for public viewing.

The personality of each human is unique, reflecting her own past experiences which have left their impression upon the person. Although the personality is not composed of static traits, each person, due to her past environmental experiences and heredity, tends to follow the past pattern in future situations. The personality changes which occur are continuous and gradual.¹

¹Don C. Dinkmeyer, Child Development: The Emerging Self (Englewood Cliffs. Prentice-Hall, Inc., 1965), pp. 309-310.

Any instrument which attempts to measure the personality of a human being in a group situation will demonstrate only the reaction at that particular moment within that environmental situation. A brief glimpse of a portion of the true personality may be seen.

The Nurse Testing Service. The Nurse Testing Service of the Psychological Corporation includes an Entrance Examination for Schools of Nursing. This battery of tests was specifically standardized for schools of nursing.¹ The battery contains tests constructed to assess knowledge and skills, and six personality measures.

The Personal Preference Schedule, an adaptation of the Edwards Personal Preference Schedule, is designed to measure six personality characteristics. In the Nurse Testing Services booklet, the following definitions were listed for the personality characteristics:

Achievement--The desire to accomplish something of significance, attain recognition, and be a success;

Orderliness--The desire to plan and organize details; to be systematic; and to have things neat and orderly.

Persistence--The willingness to keep at a job until it is finished; to put in long hours; and to be able to stick with a problem until it is resolved.

Congeniality--The tendency to get along well with

¹Professional Examinations Division, Nurse Testing Services of the Psychological Corporation (New York: The Psychological Corporation, 1965), pp. 4-5.

others; the tendency not to be vengeful; to refrain from becoming angry and to avoid blaming others when things go wrong.

Altruism--The tendency to treat others with kindness; to be generous and show affection, to help those in trouble; and to sympathize with those who are hurt or sick.

Respectfulness--The Willingness to accept leadership, suggestions, and decisions of others, to conform to ¹ custom; to follow instructions; and to praise others.

The personality inventory contains relatively independent measures which identify attitudes and feelings to be subsequently used in counseling during school enrollment.²

The test brochure does not contain test-retest statistics for the Personal Preference Schedule. Considerable statistical data is available in the scholastic aptitude area.

The Edwards Personal Preference Schedule. The Edwards Personal Preference Schedule is a self-report personality inventory which is based upon the fifteen basic motives or needs proposed by Murray.³

In Murray's theory, the basic needs can be distinguished in everyone in varying strengths. The strength of the needs and the pattern that is formed characterizes the individual personality.⁴

¹Ibid., pp. 4-5

²Ibid., p. 1

³Allen L. Edwards, Edwards Personal Preference Schedule (New York: The Psychological Corporation, 1959), p. 1.

⁴Dinkmeyer, op. cit., p. 312

The self-report uses the forced-choice method in-which each pair of items is matched in social desirability.¹ Self-report inventories bring with them the problems of accurate reporting on the part of the student.

A consistency variable is used to determine whether or not the student is answering the forced-choice items as honestly as possible.

The test-retest reliability coefficients, listed in the Edwards Personal Preference brochure for a one week interval, range from .74-.87. The sample consisted of eighty-nine college students.²

Validity is difficult to ascertain because of the inability to develop specific criterion. Self ratings and ratings by other persons bring with this method subjectivity and a difficulty in defining terminology.

Coefficients of correlations between the Edwards Personal Preference Schedule and other inventories with regard to social desirability are listed in the testing manual.

A partial report of a research project provided data from a fifteen month test-retest of the Edwards Personal Preference schedule, as administered to seventy-nine female

¹Edwards, loc. cit.

²Ibid., p. 19.

freshman nursing students. The correlations in the study "were all significantly greater than zero, but lower than those obtained in the one-week interval which is reported in the Edwards Personal Preference Schedule manual".¹

¹Daniel V. Caputo, "Test-Retest Reliability of the EPPS," Educational and Psychological Measurement, XXVI (March, 1966), 885.

CHAPTER II

METHOD

The study was evolved from the necessity to explore the validity and reliability of the Personal Preference Schedule with regard to the Mercy Hospital School of Nursing students. The data was used for the evaluation and the improvement of the guidance program.

I. TEST-RETEST

Test-retest was performed on the student body of Mercy Hospital School of Nursing. Besides recent high school graduates, the student population included transfer students; students who had returned to continue their nursing education after an absence of two or more years; students who had been previously employed or pursuing other careers.

Occasionally, due to various circumstances, other pre-entrance examinations were used. Most frequently, transfer students had different testing tools in their admission profile.

One hundred twenty-six students were available to be retested. Of this number, one hundred eleven had taken the Personal Preference Schedule prior to admission. Five students did not participate in the retesting; three were

senior married students and two junior students withdrew.

The retesting was completed for the various classes according to the following schedule: Seniors--May of the senior year; Juniors--two thirds in May of junior year and one-third in the fall of the senior year; Freshman-May of the freshman year. The Junior class could not be re-tested as a group because of an educational affiliation away from the home school.

The retest examiner had previous experience in administering the examination. The Personal Preference portion of the examination is not timed; and the score sheets were sent to the Psychological Corporation for machine scoring.

II. RATING BY REFERENCES

The two most knowledgeable references were selected from the admissions folder of each student. The most knowledgeable references for this report were defined as persons removed from immediate family friendships; those who have been able to observe the student in an ongoing environmental situation; and those who have basic knowledge concerning human development.

A letter and rating scale was sent to each reference requesting his evaluation of the student in percentiles, using the defined personality characteristics.

The return of at least one or both reference rating scales was seventy-seven percent. Twenty-three percent of the students did not have reference rating scales returned. Of the twenty-three percent, fifty percent of the no returns were rating scales for senior students, twenty-five percent were rating scales for junior students, and twenty-five percent were rating scales for freshman students.

Of the seventy-seven percent which had one or both reference rating scales returned, fifty percent had both scales returned and fifty percent had one returned.

III. RATING BY INSTRUCTORS

Two instructors from Mercy Hospital School of Nursing rated each student. The students were rated, using the defined personality characteristics, according to a percentile. The instructor determined the student's position on the rating scale from observation of student behavior in the classroom and clinical area.

The reported results were entered on tables and test-retest, test-character reference rating scale, retest-instructor, and character reference-instructor rating scale correlations were computed.

CHAPTER III

DEVELOPMENT OF THE PROBLEM

A review of current material in the area of personality development, particularly the adolescent, contributes to understanding the reactions of a nursing student to her environmental stimuli. The adolescent in a school of nursing finds herself in a foreign setting which requires adaptation to a specific post high school milieu.

I. REVIEW OF THE LITERATURE

Personality development, a complex process in human maturation, has an intangibility which creates difficulty in understanding and assessment. A multitude of research and discussion has occurred in attempting to evaluate and chart its developmental course. A review of some factors which are common to most of the written analyses provided an overview of this phase of human development.

Personality Development. Personality is defined by Cole and Hall as:

A fairly stable configuration of tendencies--acquired or inherited--around which the individual attempts to integrate his experiences and from which his behavior emerges.¹

¹Luella Cole, et al., Psychology of Adolescence (New York: Holt, Rinehart and Winston, Inc., 1965), p. 283.

Crow and Crow further felt that not only are the personality traits important, but also the type of continuous integration process.¹

The following definition of a personality trait was offered by Crow and Crow:

A personality trait is a particular aspect of dimension of personality that tends to manifest its functioning to a high degree of consistency in an individual's behavior In terms of social inter-relationships, however, the significance to an individual of his predominant personality trait or traits is determined for the most part by the reactions of other persons to his display of trait-controlled behavior.²

Generally a cluster of traits, rather than one single trait, is evaluated.

Each individual begins his personality formation early in his life span. While the newborn reacts only to the physical needs of his being, the young child begins to display social awareness, based on hereditary characteristics and the influence of his milieu. The child becomes aware of what is his, material items, desires and needs, and what belongs to others. The development of self-awareness is necessary for the child to become aware of his own personality.

During early childhood the personality is primarily

¹Lester Crow, et al., Adolescent Development and Adjustment (New York: McGraw-Hill Book Co., 1965), pp. 158-159.

²Ibid.

molded by the authority figures; as the child becomes older, his reactions to peer attitudes and mores influence his environment to a greater extent. The acceptance by his peer group, whether or not this group is acceptable to society in general, fulfills a prominent need. A close relationship exists between social acceptance and personal adjustment. Due to this relationship, adolescent personality development is both the cause and the result of the experienced social interactions.¹ The inherent or core characteristics of the personality are present throughout life. The personality, although remaining basically the same, reacts to the environment undergoing a gradual change which may not be easily apparent.

As an individual becomes a mature adult, his self-concept emerges more clearly and accurately. He learns to accept himself for what he is, his strengths and faults. It is only when an adult can evaluate his own reactions and develop this type of self-understanding that he is capable of understanding others. Cole and Hall stated, "A characteristic of a positive development of the self is the ability to sustain a difficult situation for the sake of a potential goal."²

¹Ibid., pp. 168-169.

²Cole, et al., op. cit., p. 279

Life values are developed during the formative years, and in modern society the adolescent is exposed to many moral philosophies. Life values are based upon ideals, moral concepts and religious understandings. The religious background of the family undoubtedly influences the life value formation of the adolescent. Crow and Crow noted that a self-actualizing person bases her values on a reality determined intrinsic basis, a system of stable values, rather than a relative and extrinsic basis.¹ A philosophy of life, although formulated, is constantly changing and growing out of attitudes toward accepted values.

Maturity is generally reached sometime in the late teens or early twenties. A true adult may be defined as:

A person of adequate physical and mental development, controlled emotional reactions, and tolerant attitudes; he has the ability to treat others objectively; he is independent of parental control, reasonably satisfied with his point of view toward life, and reasonably happy in his job; he is economically independent; he is not dominated by the opinions of those about him nor is he in revolt against social conventions; he can get along in ordinary social situations without attracting unfavorable attention; and, above all, he has learned to accept the truth about himself and to face reality instead of either running away from it or making believe it is not there.²

The post high school setting. The post high school educational environment is presented to most individuals in

¹Lester Crow, et al., Adolescent Development and Adjustment (New York: McGraw-Hill Book Co., 1956), p. 364.

²Cole, et al., op. cit., p. 633.

their late teens, during peer-orientated social influence. The faculty and formal influences in institutions of higher education change the value systems of their students less than the peer-group pressures.¹

It is not until the mid-twenties, or the graduate school age group that the individual becomes more concerned with the attitudes, values and expectations of the adult world.² The late adolescent is traditionally idealist but not always realistic in her response to various environmental stimuli. Although in modern society the adolescent has been given greater freedom of self-direction than ever before, the social mores of the familiar milieu are present during the high school years.

Mass communication media have involved the adolescent in social problems and the response of various elements of society to these problems. Today's adolescent has been actively involved through the television medium since pre-school, while past generations were stimulated by the written or spoken word at a later developmental age. It is to the post high school setting that each person brings his unique background of inherited traits and environmental experiences.

¹David Gottlieb, et al., The American Adolescent (Homewood: Dorsey Press, 1964), p. 187.

²Ibid., p. 184.

II. A SPECIFIC POST HIGH SCHOOL SETTING

Mercy Hospital School of Nursing is a three academic year hospital affiliated nursing program located in Des Moines, Iowa. In the central Iowa area, the school is one of several which offers a diploma in nursing and fulfills the requirements necessary for eligibility to participate in the nursing examinations administered by the Board of Nursing. The successful completion of this examination is a prerequisite for the title of registered nurse.

The student body. The student body consists of approximately one hundred twenty students. These students are generally in their late adolescence, having graduated from high school during the spring before their fall admission to the school. A few students have had college or work experience prior to admission. The majority of students are from the Iowa area; however, various other sections of the country are represented. Since Iowa is basically a rural state, many of the students come from a small town environment with a small or intermediate size co-educational high school. The Des Moines area contributes about twenty-five percent of the students; this area contains larger high schools, including one technical high school and a private girl's school.

Admission policies do not restrict applicants with regard to race, sex, or marital status. However, the student

population is basically caucasian, female and unmarried. A few students enter the school married and are generally somewhat older.

The background of most students could be socially classified as middle-class; they come from homes where both of the parents are present and interested in their children's success in the post high school setting.

As a post high school educational institution offering a specific course of instruction, rather than a liberal arts program, the interests, abilities, and vocational goals of the students are more homogeneous. A tentative occupational choice has been made and an educational institution selected which offers no occupational flexibility.

Academic life. Academic life for the student incorporates learning experiences offered at the home school and hospital, a local university, and various affiliating health agencies. Courses are arranged to offer basic principles and the development of skills in the physical, social, psychological, and religious aspects of human development, including preventative and restorative health. Typically, a three year diploma school of nursing devotes time early in the program to a combination of classroom theory and clinical experience. The faculty-student ratio is about one to ten, allowing for considerable personal attention for the individual student.

Student personnel services. Student personnel services include recruitment and orientation, testing, counseling, financial aid program, student government, extra curricular organizations and activities, and health services. The program was administered by the administrative staff within the institution, aided by faculty committee recommendations and faculty participation.

Residence hall facilities are available on campus and are utilized by the majority of the students. Living at home is acceptable; however, only a few of the non-married students select this alternative.

The counseling program. The counseling program was organized on the basis of assignment of faculty member counselors to the freshman students. The faculty members involved in freshman counseling were also the instructors responsible for the freshman courses in the home school. Each student was assigned to a counselor and expected to meet with the counselor at a minimum of once a month during the school year. Counseling was to include all phases of student adjustments, but primarily centered on the academic aspects. The counselors were encouraged to keep confidential notes to facilitate continuity. The student's information profile was available and the administration encouraged its use by the faculty.

Students during the remaining two years of school participated in a loosely structured program. Counselors

were not assigned, as such, but all faculty members were available for counseling purposes. Junior and senior students were engaged in active nursing practice in the clinical setting with instructor guidance, which included an on-going academic counseling situation with more formal evaluation every six to eight weeks.

School administration lived in the student residence hall and was available to the students at all times. However, the administration was also actively involved in the inevitable disciplinary aspects of student life, both academic and personal.

Little formal guidance was provided the faculty members with regard to developing skills and knowledges pertinent to counseling. The faculty group includes many levels of academic preparation, ranging from masters degrees to additional college preparation beyond the basic diploma program. The school administration was available to discuss the various aspects of counseling with the less well prepared faculty members.

More total utilization of the pre-admission student data by the faculty would benefit student welfare; however, some information was needed for a more comprehensive understanding of the student profile.

The pre-entrance testing tool, which is specific for schools of nursing and used by the minority of schools in the general area, contained both academic and personality

profiles. The personality profile, the Personal Preference Schedule, was the primary reason for using this specific test; therefore, exploration of methods for incorporating the reported personality information into the counseling setting was necessary.

CHAPTER IV

PRESENTATION OF THE PROBLEM

The primary questions which arose included whether or not the students' total development during their three year program resulted in changes in the personality profile; whether or not the personality traits as reported are observable in the students' environmental responses in both academic and clinical practice situations. In the process of admissions, whether or not the character references contribute objective information to the admission profile.

I. THE HYPOTHESES

Proposed hypotheses. The following hypotheses were proposed: (1) The personality characteristics as reported from testing will progressively vary from pre-nursing to graduation. (2) The most recent reported personality characteristics will have a positive correlation with the rating scale of the instructor. (3) The rating scale of knowledgeable character references will show a low correlation to the reported testing.

Discussion of the hypotheses. Hypothesis I. The students of the school of nursing were mostly teen-agers. Cole and Hall stated, "The identification by each individual of his own fluid but unique organization is a lifelong

process. However, this development seems to reach intensification during adolescence."¹ This would be even more true for adolescents who suddenly find themselves confronted with dormitory living, new environmental situations and freedoms each day. Theory and correlated clinical experience emphasize not only the individuality of self, but also that of all other humans as they strive to meet the stress situations of life.

Greater freedom allowed in making decisions will contribute to the on-going developmental pattern and more reality testing of the students' idealistic concepts occurs. Daily opportunities are presented for creative utilization of their individual potential, both in theory and more totally in the clinical laboratory where social and psychological principles are applied to an ever changing and increasingly more complex environment. This stimulation allows the students to grow in the direction of greater flexibility, creativity and self-understanding.

Hypothesis II. Most psychologists agree that the external expressions, at least, and possibly the central traits are affected by the total life experiences of the individual. It is the external expressions which are being evaluated by the nursing instructors in their daily contact

¹Luella Cole, et al., Psychology of Adolescence (New York: Holt, Rinehart and Winston, Inc., 1965), p. 267.

with students. However, the extent this overt activity reflects the true need and resultant motive is difficult to ascertain.

In the clinical laboratory, the instructor works closely with the student. Observations are made by the instructor, on a day to day basis, of interpersonal dynamics, problem-solving techniques, and the meeting of professional and personal responsibilities. The observation of student reactions in an actual situation should be more accurate than a paper and pencil situation. The necessity of the instructor to develop a keen sense of perception and objective observational skills is paramount to making fairly accurate judgments, making her able to provide intelligent and growth-stimulating guidance.

Hypothesis III. The character references which were selected had had considerable contact with the student during her high school years. However, some of the persons who received rating requests had not had actual contact with the student during the past three years. The percentage of return of the rating scale was noticeably lower for this group of students, the senior class.

Character references are asked to complete a character reference pre-entrance form and mail it to the school by the student requesting the reference. When these forms were reviewed by admissions committee members it was apparent that

little pertinent information was present, either for pre-admission knowledge or counseling background. An occasional objective and informative report was submitted. It would be expected that the persons whom applicants requested to complete character reference forms would be individuals who could and would submit a "good" character resume. Yet, most of the references could offer information, of a non-confidential nature, which would facilitate the continuity of guidance of the student. Therefore, if the written pre-admission reference contained so little objective information, the percentile ratings of specific personality characteristics may be equally non-committal.

II. THE TESTING TOOL

The Psychological Corporation offers a comprehensive nurse testing service which includes an entrance examination. The brochure published for the entrance examination provided little to no data with regard to the validity and reliability of the personality trait profile, the Personal Preference Schedule. The test was not reviewed in the Sixth Mental Measurement Yearbook; and a minimal amount of published data was to be found.

The Personal Preference Schedule is a special adaptation of the Edwards Personal Preference Schedule which is a self-report personality inventory based on Murray's theory of fifteen needs. The format is the forced-choice method

in which each pair of items is matched in social desirability. The Personal Preference Schedule in the Entrance Examination for Schools of Nursing presents the same format. The test is untimed and careful explanation is presented during the testing session stressing the method of responding to the paired items.

The Entrance Examination Personal Preference Schedule is designed to measure the following six personality characteristics:

Achievement--The desire to accomplish something of significance, attain recognition, and be a success; ambitiousness.

Orderliness--The desire to plan and organize details; to be systematic; and to have things neat and orderly.

Persistence--The willingness to keep at a job until it is finished; to put in long hours; and to be able to stick with a problem until it is resolved.

Congeniality--The tendency to get along well with others; the tendency not to be vengeful; to refrain from becoming angry and to avoid blaming others when things go wrong.

Altruism--The tendency to treat others with kindness; to be generous and show affection, to help those in trouble; and to sympathize with those who are hurt or sick.

Respectfulness--The willingness to accept leadership, suggestions, and decisions of others, to conform to custom; to follow instructions; and to praise others.¹

The characteristics are reported on the student profile as percentiles. The personality inventory contains relatively

¹Professional Examinations Division, Nurse Testing Services of the Psychological Corporation (New York: The Psychological Corporation, 1965), pp. 4-5.

independent measures which identify attitudes and feelings to be subsequently used in counseling during school enrollment.¹

The Personal Preference Schedule, as a self-report personality inventory, has a factor of subjective reporting. In a pencil and paper test, the information which is given does not necessarily demonstrate the motive which makes this response the one of choice.

The forced-choice method employed by Edwards pairs two items which have been previously scaled for social desirability; this method reduces the interpretation difficulty of the paired statements. Also, when the examinee chooses the statement which is "most like" what he feels is a self-description, rather than an absolute self-description, an interpretation of statements may be more easily made. The social desirability index allows the examinee to choose between two statements which appear to be equally acceptable but represent a different manifest need. Anastasi wrote:

The construction of a forced-choice inventory requires two principal types of information regarding each descriptive phase, its social desirability or "preference index" and its empirical validity or "discriminative index". Social desirability can be found by having the items rated for this variable by a representative group, or by ascertaining the frequency with which the item is endorsed by self descriptions. Edwards has shown that frequency of

¹Ibid., p. 1.

choice and judged social desirability correlate between .80 and .90. In other words, the average self-description of a population agrees closely with its average description of a desirable personality.¹

Although the above reported relationships cannot be attributed to deliberate faking, since anonymously filled out questionnaires also resulted in high correlations, a conscious or unconscious facade effect should not be entirely ignored.²

The consistency variable is comprised of fifteen items repeated at intervals throughout the test to provide an index of respondent consistency.

The discussion of validity of the Edwards Personal Preference Schedule in the testing manual included the following:

The validity of a test or an inventory is frequently defined as "the extent to which the test or inventory actually measures what it purports to measure". If this definition were accepted at face value, the determination of the validity of an inventory would involve the correlation between scores on the inventory and some "pure criterion measure" of what the inventory purports to measure. Such pure criterion measures are, of course, generally not available. As a result, self-ratings or rating by peer-groups have frequently been substituted for the pure criterion measures.³

Whenever rating scales are used the following factors

¹Anne Anastasi, Psychological Testing (New York: The Macmillan Co., 1961), p. 511.

²Ibid.

³Allen L. Edwards, Edwards Personal Preference Schedule (New York: The Psychological Corporation, 1959), p. 21.

must be considered: the definition and degree of complexity of the variable, the amount of insight, knowledge and ability of the subjects doing the ratings, and the extent that social desirability influences the rater.¹

Self rankings and peer rankings were used in the Edwards Personal Preference Schedule. However, the significance of these ratings and how they could be utilized were negated in the manual. The matter of self rating and peer ranking brings various and complex problems which make interpretation difficult.

Correlations with other scales may be used as a method of understanding the measured variables of an inventory; two such correlations are offered in the testing manual.

The consensus of the two reviewers of the Edwards Personal Preference Schedule in the Sixth Mental Measurement Yearbook was that the test has meager validity data and little justification for assuming that the scales measure purported constructs. The reliability data of most of the scales are comparable to other personality inventories. Test-retest of one week may reflect memory factors, while split-half reliability coefficients are inflated due to item duplication within the scale. The test could best be

¹Ibid.

used by the counselor to stimulate discussion.¹

Anastasi pointed out that personality inventories have many problems yet to overcome. These include (1) behavior measured is more changeable than on other types of testing complicating reliability; (2) the difficulty in classifying personality traits and their reaction in various environmental situations; (3) the presence of a conscious or unconscious facade effect; (4) the difficulty with regard to adequate criterion data necessary to establish validity. Due to these problems, personality inventories are most successfully used as a discussion tool in the counseling situation.²

III. DATA GATHERING

The Personal Preference Schedule was readministered to the student body at approximately the same time. The students' varied in their academic experience from nine to twenty-seven months. Scoring service was provided by the Psychological Corporation. Tables IV through VI, (see appendix), show the test and retest percentiles.

The faculty members received the Personal Preference Schedule's six reported personality characteristics with

¹Oscar Kruiser Buros, The Sixth Mental Measurement Yearbook (Highland Park: The Gryphon Press, 1965), pp. 195-207.

²Anastasi, op. cit., pp. 519-520

accompanying definitions as demonstrated in Figure 1. Each faculty member was requested to rate the student, by percentiles, according to the demonstrated behavioral patterns observed in the classroom, the laboratory and clinical settings. Two instructors rated each student with selection based upon the type of academic contact between instructor and student, whether classroom, clinical or a combination; the level of the student at the time of the contact; and the present level of the student in the nursing program. Tables I through III, (see appendix), present the individual instructor ratings, while the average of the two instructor ratings is listed on Tables IV through VI, (see appendix).

The selection of the two most knowledgeable references was made from the pre-entrance information in the student's personal folder. A letter explaining the purpose of requesting the information, how to rate the student by percentiles, and a list of the six reported personality characteristics was mailed to each reference. A reproduction of the letter is Figure 2. Tables I through III present data gathered from the character references. The average of the references is presented on Tables IV through VI, (see appendix). The percentage of response of at least one reference rating was seventy-seven percent.

FACULTY MEMBER RATING SCALE FORM

Completed by the faculty member after an individualized discussion of the project and percentile rating.

Would you please rank _____ on the listed characteristics.

Definition

Percentile

ACHIEVEMENT--The desire to accomplish something of significance, attain recognition, and be a success; ambitiousness.

ORDERLINESS--The desire to plan and organize details; to be systematic; and to have things neat and orderly.

PERSISTENCE--The willingness to keep at a job until it is finished; to put in long hours; and to be able to stick with a problem until it is resolved.

CONGENIALITY--The tendency to get along well with others; the tendency not to be vengeful; to refrain from becoming angry and to avoid blaming others when things go wrong.

ALTRUISM--The tendency to treat others with kindness; to be generous and show affection; to help those in trouble; and to sympathize with those who are hurt or sick.

RESPECTFULNESS--The willingness to accept leadership, suggestions, and decisions of others, to conform to custom; to follow instructions; and to praise others.

Figure 1. Faculty member rating scale form.

CHARACTER REFERENCE RATING SCALE FORM

I am gathering data for summary and implementation in improving our guidance services. We have the below personality characteristics reported as part of our testing service; and would like to compare this profile with the observations made by knowledgeable persons in the student's usual environment.

Would you please rank _____ on the listed characteristics in comparison with other high school students. Please evaluate each characteristic using a percentile and record in the appropriate space. For our purpose, the percentile will be the number of students who you feel rank below the student in this particular characteristic. Ex. 85th percentile would mean the student ranks as well, if not better, than 85% of the students you know.

Definition

Percentile

ACHIEVEMENT--The desire to accomplish something of significance, attain recognition, and be a success; ambitiousness.

ORDERLINESS--The desire to plan and organize details; to be systematic; and to have things neat and orderly.

PERSISTENCE--The willingness to keep at a job until it is finished; to put in long hours; and to be able to stick with a problem until it is resolved.

CONGENIALITY--The tendency to get along well with others; the tendency not to be vengeful; to refrain from becoming angry and to avoid blaming others when things go wrong.

ALTRUISM--The tendency to treat others with kindness; to be generous and show affection; to help those in trouble; and to sympathize with those who are hurt or sick.

RESPECTFULNESS--The willingness to accept leadership, suggestions, and decisions of others, to conform to custom; to follow instructions; and to praise others.

Please return the evaluation in the enclosed envelope.
Thank you for your co-operation.

Figure 2. Character reference rating scale form.

Rating scales. Rating scales must be constructed to contain a few well-defined statements which must be assigned a specific classification or value by the rater. Best discussed rating scale limitations which include: (1) The halo effect, the tendency to rate a person higher on another trait due to the previous desirable trait which has just been rated; (2) The tendency of raters to rate the student higher than what is demonstrated by objective evidence.¹

V. DATA COMPUTATION AND EVALUATION

The data were computed by the Pearson Product Moment Correlation Matrix. Values of the correlation coefficient were interpreted at the .05 level of significance.²

Test-retest. The test-retest correlations showed a significant correlation from .26 to .44 of the six reported personality characteristics. The time element range of the test-retest was from nine to twenty-seven months. The correlation would indicate that a degree of consistency was present with the use of the Personal Preference Schedule. The correlations are presented on the following table, Table VII.

¹John W. Best, Research in Education (Englewood Cliffs: Prentice-Hall, Inc., 1959), p. 165.

²Allen Edwards, Statistical Methods for the Behavioral Sciences (New York: Holt, Rinehart, 1954), p. 502.

TABLE VII
TEST-RETEST CORRELATIONS

REPORTED CHARACTERISTIC	CORRELATION
Achievement	0.273
Orderliness	0.443
Persistence	0.288
Congeniality	0.332
Altruism	0.264
Respectfulness	0.432

Correlations computed on 105 students
Significant correlation of 0.195 at the 0.5 level

Although the personality traits of the student are involved in an on-going developmental process, there is a consistency which would indicate a central core of traits or a basis personality trait composite.

The student retest profile indicated the response to self-reported feelings, as proposed by the Personal Preference Schedule, did show a change in many of the character traits. Table VIII contains the percentage of each class whose response varied ten percentile or more from test to retest. Each reported personality characteristic had at least fifty percent or more of the students who had this variation. The least total variation occurred in the

freshman class which had been retested within a nine month interval. The junior and senior classes demonstrated a comparable variation, the junior class ranged from sixty-one to seventy-one percent while the senior class ranged from fifty-four to seventy-three percent.

A greater number of seniors had lower retest percentiles versus higher retest percentiles in each characteristic. The junior class retest report contained a greater number of students rating lower in all areas except altruism, in which forty-two percent reported an increase. Of the freshman students, the retest percentiles showed a greater decrease than increase in all characteristics. This variation again demonstrated that personality development is an on-going process in which the student is evaluating and responding in a changing need-motivational pattern. Facade was not necessary since the students knew the research nature of the retest and pre-entrance pressure was not present.

A recent research article suggested that elements which may influence a self-report inventory include the willingness of the student to co-operate, the individual's feeling of personal adequacy, the availability of adequate symbols of expression, and the subject's feeling of freedom from threat.¹

¹James Parker, "The Relationship of Self Report to Inferred Self Concept," Educational and Psychological Measurement, XXVI (March, 1966), 691-700.

TABLE VIII
PERCENTAGE OF STUDENTS WITH RETEST VARIATIONS OF
TEN OR MORE PERCENTILE POINTS FROM TEST

REPORTED CHARACTERISTIC	SENIORS		JUNIORS		FRESHMEN	
	ABOVE TEST	BELOW TEST	ABOVE TEST	BELOW TEST	ABOVE TEST	BELOW TEST
Achievement	20%	34%	29%	37%	30%	35%
Orderliness	17%	56%	21%	42%	16%	35%
Persistence	17%	46%	11%	55%	11%	43%
Congeniality	17%	56%	24%	37%	19%	38%
Altruism	23%	43%	42%	29%	32%	36%
Respectfulness	17%	37%	18%	48%	11%	49%

Test-reference. The lack of correlation in the area of test and character reference is indicated on Table IX. The percentiles, in themselves, showed a consistently higher percentile being assigned the student by the character reference than those reported on the test profile, as reported on Tables I through VI, (see appendix). Since these students would have certain status as academic achievers in their high school environment, this may have represented a "halo effect." Also the tendency to rank students higher when the information was being sent from the home school, or the criteria difficult to evaluate due to its intangible property. The time element between observation of student behavior and evaluation must also be considered.

Accurate observation requires several factors which are, at the best, minimal from the character reference rating viewpoint. These factors are that observation should be directed by a specific purpose, that it should be systematic, and that it should be thoroughly and objectively recorded with as little time lapse as possible.¹

TABLE IX
TEST-REFERENCE CORRELATIONS

REPORTED CHARACTERISTIC	CORRELATION
Achievement	0.184
Orderliness	-0.042
Persistence	0.017
Congeniality	0.068
Altruism	-0.107
Respectfulness	0.005

Correlations computed on 84 students
Significant correlation of 0.217 at the 0.5 level

The data demonstrated the character reference rating scales were comparable to the information gathered from the pre-entrance character reference requests. The "halo effect" appeared to be prominent in both instances.

Retest-instructor. Table X contains the retest-instructor rating correlations, with no significant

¹Best, op. cit., p. 162.

correlation being demonstrated. In reviewing the recorded instructor rating scale percentiles, it is noted that the instructor ratings are generally above the reported retest personality characteristics, Tables I through VI, (see appendix).

TABLE X
RETEST-INSTRUCTOR CORRELATIONS

REPORTED CHARACTERISTICS	CORRELATIONS
Achievement	-0.171
Orderliness	-0.054
Persistence	0.078
Congeniality	-0.006
Altruism	0.069
Respectfulness	-0.055
Correlations computed on 118 students	
Significant correlation of 0.174 at the 0.5 level	

Although the purpose of the study and the percentile significance was discussed with each faculty member, the "halo effect" seemed to be apparent in the rating scales of some of the faculty members. The observation principles as previously discussed may again be applied to this rating scale. The difficulty experienced by the rater of being able to transfer rather intangible personality traits of

the Personal Preference Schedule from the concrete observations of the clinical area. The type of observations consistently practiced by the nursing instructor involve the environmental reactions of the student in the clinical laboratory and academic milieu. The application of scientific principles from psychology and sociology are observed and guidance instituted on an individual basis. The academic achievements of the student and the observational behavior reports of the instructor seem compatible. However, the observational behavior reports are of greater value as a discussion tool to provide an on-going instructional guidance program than as a grading tool. The process recording and other subjective evaluation tools written by the student also provide valuable avenue of instructor-student exploration, leading to student self-understanding and maturation.

Reference-instructor. Table XI shows the lack of correlation between character reference rating scales and instructor rating scales. The percentiles returned from character reference rating scales were generally higher than those of the instructor rating scales as demonstrated in Tables I through III, (see appendix).

TABLE XI
REFERENCE-INSTRUCTOR CORRELATIONS

REPORTED CHARACTERISTIC	CORRELATIONS
Achievement	0.073
Orderliness	-0.008
Persistence	0.016
Congeniality	0.024
Altruism	0.009
Respectfulness	0.025
Correlations computed on 95 students Significant correlation of 0.095 at the 0.5 level	

CHAPTER V

CONCLUSION

I. REVIEW OF THE PROBLEM

Purpose. The purpose of the study was to establish the validity and reliability of the personal Preference Schedule of the Pre-Entrance Examination for a specific school of nursing. The resultant data is to be utilized in the guidance program of the school.

The testing tool. The testing tool was the Entrance Examination for Schools of Nursing published by the Psychological Corporation. The personality trait utilization was one of the reasons the school subscribed to this specific pre-entrance examination. The brochure published in conjunction with the Nurse Testing Service of the Psychological Corporation suggested that the Personal Preference Schedule be used in post admission counseling. However, little information was available in the testing brochures regarding validation, reliability or utilization of the Personal Preference Schedule. Since this inventory is an adaptation of the Edwards Personal Preference Schedule, literature discussing this test was reviewed.

The Personal Preference Schedule profile of the Pre-Entrance Examination for Schools of Nursing reports the

following six personality characteristics as percentiles:

Achievement--The desire to accomplish something of significance, attain recognition, and be a success; ambitiousness.

Orderliness--The desire to plan and organize details; to be systematic; and to have things neat and orderly.

Persistence--The willingness to keep at a job until it is finished; to put in long hours; and to be able to stick with a problem until it is resolved.

Congeniality--The tendency to get along well with others; the tendency not to be vengeful; to refrain from becoming angry and to avoid blaming others when things go wrong.

Altruism--The tendency to treat others with kindness; to be generous and show affection, to help those in trouble; and to sympathize with those who are hurt or sick.

Respectfulness--The willingness to accept leadership, suggestions, and decisions of others, to conform to customs; to follow instructions, and to praise others.¹

Adolescent development. Personality development is an on-going process which begins with inherent traits and is molded by environmental situations. Integration of the philosophy of life, moral values and emotional development occurs during late adolescence. Most of the student body involved in nursing education would be in this stage of adolescent development. The academic program of a diploma school of nursing offers a unique experience in the area of human relations. This experience, in conjunction with the

¹Professional Examinations Division, Nurse Testing Services of the Psychological Corporation (New York: The Psychological Corporation, 1965), pp. 4-5.

post high school milieu provides for a continuous re-orientation of self to the changing environmental stimuli. These aspects raise the following questions with regard to the proper utilization of the Personal Preference Schedule in counseling: (1) whether or not the student's total development during their academic program resulted in changes in the personality profile; (2) whether or not the personality traits as reported are observable in the student's environmental responses in both academic and clinical practice situations; (3) the ability of character references to contribute objective observations to the admission profile.

Proposed hypotheses. The following hypotheses were proposed:

The personality characteristics as reported from testing will progressively vary from pre-nursing to graduation.

The most recent reported personality characteristics will have a positive correlation with the rating scale of the instructor.

The rating scale of knowledgeable character references will show a low correlation to the reported testing.

Data collection and computation. Data was collected by retesting the student body using the Personal Preference Schedule of the Pre-Entrance Examination for Schools of Nursing. Students varied in academic experience within the school from nine to twenty-seven months. The retest was scored by the Psychological Corporation and the personality

traits were reported as percentiles.

A rating scale comprised of the six personality traits was prepared. Two nursing instructors rated each student by percentiles on each of the defined personality traits. The same rating scale was mailed to the two most knowledgeable character references in the student's personal file, with a request to rate the student by percentile on the same character traits.

The results of the test-retest, instructor ratings and character reference ratings were entered on tables. Using the Pearson Product Moment Correlation Matrix, the following correlations were computed; test-retest, test-character reference ratings, retest-instructor ratings, character reference ratings-instructor ratings. Significant correlation was found to be present only in the test-retest data.

II. HYPOTHESES EVALUATION

The data which was gathered and discussed has the following implications upon the proposed hypotheses.

Hypothesis I. Hypothesis I stated the personality characteristics as reported from testing will progressively vary from pre-nursing to graduation.

The personality characteristics as reported did vary to some extent. However, the amount of variation from

freshman to senior students was not particularly significant. The correlation for the test-retest was from .26 to .44.

The consistency would demonstrate an inherent central core of tendencies and set with regard to environmental response. However, the degree of correlation and the high percentage of students with many diversifications in the retest percentile ratings also demonstrated an on-going process of personality development.

Hypothesis II. Hypothesis II stated that the most recently reported personality characteristics will have a positive correlation with the rating scale of the instructors.

A significant correlation was not found to be present between the most recently reported personality characteristics and the instructor rating scales. The percentile ranks of the instructor rating scales were somewhat higher than that of the retest. The instructor may have found it difficult to evaluate the intangible aspects of the personality profile versus the more objective evaluation in the academic and laboratory setting. This is substantiated by the compatibility of academic performance, the clinical progress observations of student progress by various instructors in varied clinical situations, and student process recordings.

Hypothesis III. Hypothesis III stated the rating scales of knowledgeable character references will show a

low correlation to the reported testing.

The rating scales returned by the character references demonstrated a lack of significant correlation with the test results. The percentile rankings returned by the character reference authors were consistently higher than the testing percentiles. The presence of the halo effect, the time element, and the intangible aspects of the personality traits rated must all be considered as factors in reference ratings. However, the tendency of the character reference to contribute non-essential rather than pertinent, non-confidential information to the student pre-admission profile seems compatible with the gathered data.

Validity and reliability. The Personal Preference Schedule reliability was low for this specific sampling of nursing students. Due to lack of easily applicable criterion, the validity is difficult to ascertain. However, the individual observations of nursing instructors as recorded on clinical progress notes, theory and laboratory records appear relatively consistent throughout the academic program although lack significant correlation with the retest.

III. UTILIZATION OF THE PERSONAL PREFERENCE SCHEDULE

The Edwards Personal Preference Schedule Manual suggests the value of the examination at present is as a discussion tool. The Personal Preference Schedule should

be used in this manner. However, the Nurse Testing Manual did not include guidelines for use beyond the fact that it should be used for post-admission counseling.

The Edwards Personal Preference Schedule Manual stated: "Because of the nature of the variables measured by the EPPS, there is usually no problem involved in permitting students to see their scores."¹ Additional comments included the desirability of discussing the relationships suggested by the patterning of the scores rather than placing emphasis on extreme scores only. The testing profile should be discussed with the student in terms of a range, rather than a specific score, with student participation as a primary goal.

As a discussion tool, the variables could be used to discuss the various aspects of the reported characteristics which seem incompatible with current observation. The Personal Preference Profile may be used to aid discussion about interpersonal relationships; responsibility or lack of responsibility; feelings about the necessity to achieve, and the type of expected achievement; feelings with regard to the purpose of the educational milieu, both personal and professional; the idealist versus the realistic aspects of a nursing career. From these points of initiation, a counseling situation could then be structured to meet

¹Allen L. Edwards, Edwards Personal Preference Schedule (New York: The Psychological Corporation, 1959), p. 18.

student needs.

The Personal Preference Schedule should basically be used as a discussion tool, in conjunction with all other available student data. The interpretation must be carefully made by a person who is knowledgeable concerning testing and has student contact. Unconscious subjective instructor evaluation of a single trait rather than evaluating the student's total information folder must be carefully guarded against. "Recognition of areas in which stress usually occurs should help both the teacher and the student to evaluate the problems involved, to develop resources in meeting them, and to avoid damaging ways of managing those frustrations which are almost certain to arise."¹

IV. RECOMMENDATIONS

The following recommendations are proposed with regard to the Student Personnel Services at Mercy Hospital School of Nursing.

The organization of the Student Personnel Services should be to provide a counselor for the students, whose responsibility would include the administration and implementation of the student personnel services. The person should have adequate background in counseling theory and knowledge of current nursing education. The counselor should not be involved as the disciplinarian, but be responsible for counseling all students, individually and in group situations. The hours, of necessity, would be flexible in order to arrange availability around academic and clinical laboratory exper-

¹ Luella Cole, et al., Psychology of Adolescence (New York: Holt, Rinehart and Winston, Inc., 1965), p. 128.

ience. The necessity of a close working relationship between administration, counselor and faculty can not be over emphasized.

The Personal Preference Schedule profile would be discussed with each student and interpreted with the emphasis on student participation and self-analysis.

The Personal Preference Schedule would supplement the clinical progress reports, academic achievement records, and personal information sheets.

The counselor would be responsible for providing in-service programs which would contribute to faculty knowledge in utilization of the total student profile, counseling objectives and techniques.

The counselor would be available to, and aid the instructors in interpreting specific student data and critical incident situations.

The counselor would be available to chair a study committee to evaluate the present character reference forms and make suggestions regarding possible revisions.

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APPENDIX

TABLE I
SENIOR STUDENT POPULATION--REFERENCE AND INSTRUCTOR PERCEPTION RATING SCALES
Dash indicates no data returned

Students	Reference rating scales					Instructor rating scales				
	Achievement	Orderliness	Persistence	Conscientiousness	Respectfulness	Achievement	Orderliness	Persistence	Conscientiousness	Respectfulness
81	90 90 93 95 95 93					75 90 80 90 80 80				80 60 60 90 95 80
82	95 97 97 95 97 97					60 60 40 50 50 50				50 60 60 70 85 70
83	90 95 95 85 90 85					99 99 99 80 85 95				95 90 90 75 90 90
84	85 90 80 90 90 85					90 90 90 90 90 80				99 99 99 95 95 99
85	80 80 85 80 85 75					80 60 40 30 30 70				90 40 30 40 80 90
86	- - - -					90 70 95 80 80 80				97 95 97 99 99 99
87	90 90 90 95 95 95					90 85 90 90 90 90				80 80 80 90 95 90
88	90 80 85 75 85 90					80 80 90 70 70 70				90 85 90 75 87 80
89	90 75 80 95 90 80					75 70 70 40 40 40				80 60 70 70 80 60
90	75 85 95 90 90 80					90 95 95 95 95 90				85 75 80 85 85 90
91	88 80 90 90 85 90					85 70 90 60 60 50				70 70 60 90 90 80
92	98 99 98 98 99 97					95 90 90 90 90 90				90 90 80 70 90 80
93	- - - -					90 90 90 80 90 80				99 99 99 99 99 99
94	95 99 98 99 95 99					90 80 90 70 70 70				99 99 99 95 95 90
95	90 90 90 95 95 90					90 90 90 90 80 85				90 80 95 90 95 90
96	- - - -					90 80 80 60 90 50				80 80 80 40 85 40
97	- - - -					80 60 60 60 50 50				80 80 85 40 90 90
98	40 75 90 75 90 75					70 20 20 20 20 20				80 80 40 60 80 40
99	97 95 90 90 97 97					95 90 95 70 90 90				80 85 90 90 90 90
100	90 90 90 90 90 90					60 90 40 60 60 70				70 70 70 50 50 60
101	- - - -					90 90 90 90 80 80				90 90 90 90 80 90
102	95 95 95 95 95 95					85 80 85 80 90 85				95 95 95 95 95 99
103	- - - -					75 70 70 70 50 50				85 90 85 90 90 90
104	75 95 85 95 90 90					80 60 60 50 90 70				90 85 90 90 85 95
105	- - - -					85 75 70 90 65 65				90 95 90 90 90 90
106	85 85 85 99 95 90					90 90 80 80 80 80				99 99 99 95 95 99
107	- - - -					50 40 60 30 20 20				99 90 75 75 85 60
108	- - - -					40 30 40 20 10 20				80 50 70 90 60 50
109	85 60 75 90 75 60					90 70 90 80 80 80				90 85 90 90 90 90
110	- - - -					80 40 60 90 80 80				80 70 80 90 70 40
111	- - - -					80 75 80 85 70 80				80 60 50 80 80 70
112	- - - -					90 80 85 90 80 75				80 60 70 90 80 80
113	- - - -					70 70 50 80 90 80				90 90 90 90 93 93
114	90 90 90 95 95 90					50 70 50 60 80 80				93 95 95 90 90 95
115	80 85 85 90 90 -					70 60 90 50 50 50				70 70 80 60 80 70
116	- - - -					90 40 80 80 80 80				90 80 90 95 93 90
117	90 90 90 85 95 90					80 80 90 60 80 80				93 90 95 80 85 85
118	96 95 95 95 90 90					90 80 90 80 80 80				90 90 90 85 80 80
119	90 85 95 95 93 90					99 99 99 65 70 80				95 95 95 90 90 90
120	92 90 95 95 95 95					99 99 99 99 99 99				95 90 95 95 95 97
121	- - - -					70 80 70 60 70 50				80 80 85 80 87 87
122	60 90 95 97 95 95					40 40 40 30 20 30				70 75 70 75 70 70

TABLE II
JUNIOR STUDENT POPULATION—REFERENCE AND INSTRUCTOR PERCENTILE RATING SCALES
Dash indicates no data returned

Intent	Reference rating scales					Instructor rating scales				
	Achievement	Orderliness	Persistence	Conscientiousness	Respectfulness	Achievement	Orderliness	Persistence	Conscientiousness	Respectfulness
J1	95 90 95 90 95 95	95 80 90 95 70 70	96 85 80 75 80 75	100 100 100 90 100 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J2	95 95 90 95 90 90	90 90 90 90 90 90	80 90 70 85 90 90	90 90 90 90 90 90	90 90 90 90 90 90	80 90 70 85 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J3	85 75 80 87 90 90	- - - -	70 65 70 70 70 65	90 90 90 90 90 90	90 90 90 90 90 90	70 65 70 70 70 65	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J4	90 90 90 90 90 90	- - - -	95 80 80 80 85 70	90 90 90 90 90 90	90 90 90 90 90 90	95 80 80 80 85 70	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J5	90 90 90 82 85 92	60 60 60 60 60 60	70 60 60 50 50 90	90 90 90 90 90 90	90 90 90 90 90 90	70 60 60 50 50 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J6	87 91 89 93 94 95	- - - -	50 50 70 30 30 50	90 90 90 90 90 90	90 90 90 90 90 90	50 50 70 30 30 50	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J7	80 80 85 83 87 90	90 95 95 95 95 99	90 95 90 95 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 95 90 95 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J8	65 65 65 85 85 60	95 94 98 97 97 97	75 50 50 50 50 50	90 90 90 90 90 90	90 90 90 90 90 90	75 50 50 50 50 50	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J9	90 85 90 80 80 80	- - - -	80 90 80 60 70 60	90 90 90 90 90 90	90 90 90 90 90 90	80 90 80 60 70 60	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J10	90 95 96 95 97 93	- - - -	90 85 80 80 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 85 80 80 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J11	85 80 80 80 80 85	99 75 90 85 95 90	- - - -	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J12	95 90 95 95 95 95	95 90 90 90 95 90	95 90 90 95 95 90	90 90 90 90 90 90	90 90 90 90 90 90	95 90 90 95 95 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J13	90 84 84 85 92 86	- - - -	70 80 80 90 80 80	90 90 90 90 90 90	90 90 90 90 90 90	70 80 80 90 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J14	50 60 50 60 60 60	- - - -	80 80 75 75 75 75	90 90 90 90 90 90	90 90 90 90 90 90	80 80 75 75 75 75	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J15	85 75 80 85 85 85	- - - -	80 70 50 80 85 70	90 90 90 90 90 90	90 90 90 90 90 90	80 70 50 80 85 70	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J16	- - - -	- - - -	95 90 95 80 90 80	90 90 90 90 90 90	90 90 90 90 90 90	95 90 95 80 90 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J17	95 85 90 90 95 90	90 85 90 90 90 85	90 90 80 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 85 90 90 90 85	90 90 80 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J18	90 50 50 50 75 75	- - - -	90 90 90 95 95 50	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 95 95 50	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J19	90 90 90 90 90 90	95 95 95 90 95 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	95 95 95 90 95 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J20	90 90 90 90 90 90	- - - -	90 95 95 90 90 95	90 90 90 90 90 90	90 90 90 90 90 90	90 95 95 90 90 95	90 95 95 90 90 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J21	75 70 70 65 65 65	75 70 70 65 65 65	90 85 80 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	75 70 70 65 65 65	90 85 80 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J22	90 80 95 90 90 95	- - - -	50 50 50 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 80 95 90 90 95	50 50 50 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J23	- - - -	- - - -	50 70 70 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	50 70 70 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J24	85 80 80 80 83 87	- - - -	80 90 90 99 99 99	90 90 90 90 90 90	90 90 90 90 90 90	85 80 80 80 83 87	80 90 90 99 99 99	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J25	95 80 85 80 80 90	- - - -	75 70 70 85 85 60	90 90 90 90 90 90	90 90 90 90 90 90	95 80 85 80 80 90	75 70 70 85 85 60	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J26	85 85 90 90 90 90	85 85 90 85 85 80	30 30 70 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	85 85 90 85 85 80	30 30 70 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J27	65 90 95 90 90 85	- - - -	90 90 90 90 90 95	90 90 90 90 90 90	90 90 90 90 90 90	65 90 95 90 90 85	90 90 90 90 90 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J28	80 85 75 80 85 90	- - - -	90 85 80 90 85 90	90 90 90 90 90 90	90 90 90 90 90 90	80 85 75 80 85 90	90 85 80 90 85 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J29	92 90 85 90 95 92	75 77 82 85 90 80	90 85 80 80 90 90	90 90 90 90 90 90	90 90 90 90 90 90	92 90 85 90 95 92	90 85 80 80 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J30	- - - -	- - - -	95 95 85 80 80 80	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	95 95 85 80 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J31	75 65 75 85 85 60	60 50 90 60 60 60	90 90 90 75 90 90	90 90 90 90 90 90	90 90 90 90 90 90	75 65 75 85 85 60	90 90 90 75 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J32	85 80 80 85 90 90	80 78 80 78 83 89	70 80 70 80 95 90	90 90 90 90 90 90	90 90 90 90 90 90	85 80 80 85 90 90	70 80 70 80 95 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J33	- - - -	- - - -	75 50 50 50 50 50	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	75 50 50 50 50 50	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J34	80 95 80 80 80 80	- - - -	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	80 95 80 80 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J35	90 85 80 90 90 85	78 78 83 83 83 87	90 80 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 85 80 90 90 85	90 80 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J36	90 95 95 90 95 98	95 95 98 97 95 90	95 85 85 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 95 95 90 95 98	95 85 85 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J37	95 85 85 90 85 90	- - - -	90 75 90 75 75 75	90 90 90 90 90 90	90 90 90 90 90 90	95 85 85 90 85 90	90 75 90 75 75 75	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J38	90 80 90 70 80 80	- - - -	75 75 60 60 60 60	90 90 90 90 90 90	90 90 90 90 90 90	90 80 90 70 80 80	75 75 60 60 60 60	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J39	90 65 90 75 75 90	95 95 99 95 99 99	90 95 99 95 95 95	90 90 90 90 90 90	90 90 90 90 90 90	90 65 90 75 75 90	90 95 99 95 95 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J40	75 85 80 85 75 75	70 80 70 70 80 80	70 70 70 60 60 80	90 90 90 90 90 90	90 90 90 90 90 90	75 85 80 85 75 75	70 80 70 70 80 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J41	- - - -	- - - -	90 90 90 90 75 90	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	90 90 90 90 75 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J42	94 95 95 95 96 95	95 90 90 99 99 95	70 50 50 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	94 95 95 95 96 95	95 90 90 99 99 95	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J43	- - - -	- - - -	90 85 85 80 85 80	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	90 85 85 80 85 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J44	87 87 87 87 87 87	- - - -	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	87 87 87 87 87 87	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J45	- - - -	- - - -	90 90 85 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	- - - -	90 90 85 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90
J46	90 90 90 90 90 90	90 85 85 95 90 90	90 90 90 90 60 80	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 85 85 95 90 90	90 90 90 90 90 90	90 90 90 90 90 90	90 90 90 90 90 90

TABLE III
RUBENZIN STUDENT POPULATION—REFERENCE AND INSTRUCTOR POPULATION RATING SCALES
Dash indicates no data returned

Students	Reference rating scales					Instructor rating scales								
	Achievement	Orderliness	Persistence	Conscientiousness	Altruism	Achievement	Orderliness	Persistence	Conscientiousness	Altruism	Achievement	Orderliness	Persistence	Conscientiousness
F1	80 95 85 90 90 95	- - - -	- - - -	- - - -	- - - -	95 95 90 90 90 95	70 60 60 65 65 60							
F2	75 90 75 90 90 95	- - - -	- - - -	- - - -	- - - -	95 90 90 90 90 95	65 60 60 65 65 60							
F3	95 95 95 90 90 90	90 90 90 90 87 75	- - - -	- - - -	- - - -	90 90 90 95 90 95	45 40 40 65 65 40							
F4	90 95 95 98 95 90	90 85 85 85 90 90	- - - -	- - - -	- - - -	65 40 60 85 85 80	90 80 90 65 90 90							
F5	60 85 85 75 75 70	85 95 75 60 75 90	- - - -	- - - -	- - - -	70 70 70 75 75 80	20 20 20 20 20 20							
F6	- - - -	- - - -	- - - -	- - - -	- - - -	85 75 75 85 85 75	55 50 70 75 75 50							
F7	85 90 82 90 95 90	- - - -	- - - -	- - - -	- - - -	90 90 90 90 90 90	70 40 70 50 40 40							
F8	90 90 90 90 90 90	95 90 90 90 90 90	- - - -	- - - -	- - - -	95 90 98 90 90 95	85 80 85 80 80 60							
F9	85 95 95 90 95 95	- - - -	- - - -	- - - -	- - - -	50 50 50 50 40 40	85 80 85 90 75 95							
F10	90 94 90 90 94 94	- - - -	- - - -	- - - -	- - - -	95 95 95 95 95 95	90 95 95 95 90 90							
F11	90 90 90 95 95 95	- - - -	- - - -	- - - -	- - - -	70 85 95 90 90 90	60 60 85 85 90 80							
F12	90 87 85 90 90 90	65 80 70 75 65 65	- - - -	- - - -	- - - -	95 95 95 95 95 95	85 70 80 90 70 65							
F13	95 95 95 95 95 95	- - - -	- - - -	- - - -	- - - -	85 90 85 80 80 80	40 50 40 40 20 20							
F14	- - - -	- - - -	- - - -	- - - -	- - - -	90 65 90 90 80 85	60 60 60 85 90 60							
F15	90 80 75 80 85 75	- - - -	- - - -	- - - -	- - - -	95 95 95 95 90 90	30 80 90 65 65 20							
F16	80 90 85 80 80 80	90 85 90 90 90 85	- - - -	- - - -	- - - -	60 90 90 90 75 90	85 70 60 90 90 60							
F17	- - - -	- - - -	- - - -	- - - -	- - - -	60 90 90 90 55 50	80 20 40 40 40 20							
F18	- - - -	- - - -	- - - -	- - - -	- - - -	80 80 80 95 95 95	85 60 80 75 75 95							
F19	90 75 25 40 40 30	- - - -	- - - -	- - - -	- - - -	70 75 80 80 80 90	50 40 30 80 85 75							
F20	25 45 95 90 90 95	90 95 90 95 95 90	- - - -	- - - -	- - - -	75 75 75 75 70 70	60 65 80 60 85 60							
F21	90 90 60 50 75 80	- - - -	- - - -	- - - -	- - - -	80 90 80 90 90 90	60 85 80 85 85 90							
F22	- - - -	- - - -	- - - -	- - - -	- - - -	80 99 90 50 50 50	80 20 85 60 60 60							
F23	80 90 90 95 85 90	- - - -	- - - -	- - - -	- - - -	90 45 45 75 70 50	10 10 10 85 85 90							
F24	75 75 75 95 75 90	65 85 75 95 95 95	- - - -	- - - -	- - - -	70 90 50 70 70 60	70 60 90 80 85 60							
F25	95 95 95 96 95 97	- - - -	- - - -	- - - -	- - - -	90 90 90 90 70 80	90 80 90 75 90 90							
F26	90 80 95 95 90 95	95 95 95 95 95 95	- - - -	- - - -	- - - -	90 90 90 95 90 95	80 60 85 80 85 60							
F27	- - - -	- - - -	- - - -	- - - -	- - - -	50 60 50 90 50 60	80 80 80 80 50 30							
F28	- - - -	- - - -	- - - -	- - - -	- - - -	60 40 40 70 70 40	20 10 10 20 60 20							
F29	95 90 90 95 85 95	90 90 90 90 90 90	- - - -	- - - -	- - - -	40 40 60 80 80 80	70 50 50 70 70 70							
F30	75 80 75 85 85 85	- - - -	- - - -	- - - -	- - - -	60 40 60 20 40 40	90 80 80 80 50 20							
F31	75 80 75 90 90 75	80 85 80 90 90 90	- - - -	- - - -	- - - -	30 20 10 60 40 80	75 75 85 85 85 65							
F32	80 90 90 85 85 95	- - - -	- - - -	- - - -	- - - -	80 75 80 80 80 80	90 85 90 85 85 90							
F33	90 90 90 95 90 95	- - - -	- - - -	- - - -	- - - -	85 83 80 85 85 87	85 80 80 60 60 65							
F34	65 80 80 90 95 95	98 80 80 90 90 80	- - - -	- - - -	- - - -	70 90 70 90 90 90	50 55 40 35 90 80							
F35	90 85 85 80 85 85	- - - -	- - - -	- - - -	- - - -	50 90 40 20 20 20	70 65 70 60 70 65							
F36	85 90 90 90 90 90	- - - -	- - - -	- - - -	- - - -	70 70 60 90 90 90	90 90 90 90 90 90							
F37	95 95 95 95 97 25	90 90 90 85 85 85	- - - -	- - - -	- - - -	80 70 80 75 80 75	60 40 40 20 20 10							
F38	85 85 80 85 85 80	90 75 80 92 85 90	- - - -	- - - -	- - - -	60 80 70 90 90 40	60 10 65 20 45 75							
F39	75 90 - 85 - 90	- - - -	- - - -	- - - -	- - - -	90 70 30 20 80 60	- - - -							

TABLE IV
SENIOR STUDENT POPULATION: TEST-RETEST-REFERENCE
AND INSTRUCTOR RATING SCALE AVERAGES

Student	Test					Retest					Average Reference					Average Instructor								
	Achievement	Orderliness	Persistence	Congentiality	Altruism	Respectfulness	Achievement	Orderliness	Persistence	Congentiality	Altruism	Respectfulness	Achievement	Orderliness	Persistence	Congentiality	Altruism	Respectfulness	Achievement	Orderliness	Persistence	Congentiality	Altruism	Respectfulness
81	90 40 80 70 70 50						98 05 40 10 60 70						*90 90 93 95 95 93						78 60 70 90 80 80					
82	30 95 20 80 90 20						80 90 40 70 05 20						93 94 94 93 96 94						55 60 50 60 68 60					
83	80 20 50 60 80 10						70 40 10 70 70 05						93 93 93 85 88 88						97 95 95 78 88 93					
84	10 70 40 70 70 90						80 30 10 40 05 70						85 90 90 90 90 89						75 75 95 93 93 90					
85	90 20 60 60 05 20						05 10 50 80 60 20						89 88 91 88 91 87						57 50 55 55 93 60					
86	40 90 70 50 30 20						05 40 50 40 05 20						- - - -						94 83 96 69 90 90					
87	50 70 50 40 10 20						50 30 50 40 70 10						*90 90 90 95 95 95						85 83 85 90 91 90					
88	30 20 20 60 10 80						40 20 50 05 05 60						*90 80 85 75 85 90						89 83 90 73 79 65					
89	20 80 70 90 80 20						30 10 50 70 50 20						88 80 83 73 75 70						78 65 75 55 60 58					
810	- - - -						40 40 20 20 02 20						*75 85 75 90 90 90						85 85 88 90 90 90					
811	30 70 70 80 20 60						30 50 30 20 20 30						92 88 93 94 91 91						78 70 75 75 75 65					
812	50 05 40 80 40 05						05 20 60 80 70 20						*98 99 98 98 99 97						93 90 85 80 90 85					
813	80 95 70 20 50 50						70 70 40 60 50 20						- - - -						95 95 95 90 95 90					
814	50 30 20 70 80 10						80 90 50 95 50 50						*95 99 98 99 99 99						95 90 95 93 83 80					
815	30 90 70 80 20 70						40 90 90 60 80 10						85 88 88 95 97 90						90 85 93 90 88 88					
816	- - - -						02 01 10 05 30 05						- - - -						85 80 80 80 85 73					
817	- - - -						20 90 30 02 05 50						- - - -						80 70 73 75 70 70					
818	- - - -						80 70 10 80 30 50						*90 75 90 75 90 75						75 90 30 40 50 40					
819	80 95 70 80 80 50						90 80 80 90 95 50						91 90 84 88 86 86						28 88 93 80 90 90					
820	50 30 70 70 10 20						- - - -						94 94 94 94 94 94						65 60 55 55 55 65					
821	99 20 02 30 20 50						20 70 20 90 20 70						- - - -						90 90 90 90 90 85					
822	80 01 05 90 50 30						40 40 01 40 30 60						*95 95 95 95 95 95						90 88 90 88 93 92					
823	10 60 70 50 20 60						10 40 30 20 05 02						- - - -						20 80 70 80 70 70					
824	90 70 05 90 60 20						20 40 25 60 40 50						75 88 88 93 90 97						85 93 75 70 68 83					
825	20 20 30 60 40 50						10 70 20 50 10 30						- - - -						20 85 80 90 78 78					
826	- - - -						20 20 60 50 95 20						*85 85 95 99 95 90						95 95 90 90 90 90					
827	40 50 70 80 01 02						20 30 70 05 10 01						- - - -						75 75 68 53 53 40					
828	- - - -						50 70 30 20 01 20						- - - -						*40 30 40 20 10 20					
829	50 50 50 90 90 30						10 05 20 95 10 20						80 78 83 94 85 70						90 78 90 85 85 85					
830	80 40 40 80 70 60						01 05 40 20 70 50						- - - -						80 55 70 75 75 60					
831	30 50 20 20 50 50						95 40 10 50 40 70						- - - -						50 68 55 83 75 75					
832	30 60 30 80 99 60						10 60 80 70 30 05						- - - -						85 90 78 90 80 78					
833	50 20 30 40 60 60						70 10 30 80 02 60						- - - -						80 80 85 85 92 97					
834	30 90 20 98 95 40						30 70 10 80 95 70						90 90 89 93 97 90						72 83 73 85 85 88					
835	- - - -						25 95 40 80 10 90						*60 85 60 90 90 -						*70 60 90 90 90 90					
836	20 50 20 02 90 60						- - - -						- - - -						90 60 85 88 87 85					
837	90 90 60 40 20 50						80 20 20 30 70 30						93 94 93 89 95 94						87 85 93 70 83 83					
838	- - - -						05 30 20 70 50 20						91 90 90 90 88 88						90 85 90 83 80 80					
839	80 80 50 80 20 50						- - - -						*90 85 95 95 93 90						97 97 97 78 80 85					
840	- - - -						50 20 20 50 70 30						*92 90 95 95 97 95						95 95 97 97 97 98					
841	10 20 10 20 50 50						10 30 70 05 20 30						- - - -						75 80 78 70 73 69					
842	00 20 10 50 10 05						80 80 30 80 90 10						*88 90 95 97 95 95						55 58 55 53 45 70					

Blank indicates no data returned
Asterisk indicates one rating scale

TABLE V
JUNIOR TROOP POPULATION TEST-RATE-7--AVERAGE
AND INSTRUCTOR RATING SCALE AVERAGE

Troop No.	Test					Rating					Average Reference					Average Instructor				
	Adaptation	Team Work	Persistence	Cooperativeness	Attitude	Adaptation	Team Work	Persistence	Cooperativeness	Attitude	Adaptation	Team Work	Persistence	Cooperativeness	Attitude	Adaptation	Team Work	Persistence	Cooperativeness	Attitude
11	80 60 82 20 02 10					70 40 82 60 40 50					95 85 80 93 83 83					95 93 83 83 83 83				
12	20 70 60 20 00 02					90 90 95 10 30 20					73 83 80 83 84 84					85 90 75 83 83 83				
13	30 60 60 20 40 70					30 90 70 30 30 30					*85 75 80 87 90 90					88 85 88 88 88 88				
14	70 30 95 30 40 70					10 20 90 70 90 70					*90 90 90 93 90 90					73 85 85 85 85 85				
15	20 95 30 90 30 20					40 60 10 20 20 20					75 75 75 71 73 76					85 80 80 77 75 75				
16	70 05 40 30 70 80					70 05 40 70 80 10					*87 91 89 91 84 85					85 85 73 80 80 83				
17	10 95 95 40 95 30					---					85 88 90 89 91 95					80 93 90 93 90 90				
18	50 60 40 50 80 60					70 20 20 40 80 60					80 80 82 91 91 79					98 35 70 40 50 60				
19	50 40 60 80 40 70					70 20 10 50 40 20					*90 85 90 80 80 80					90 85 80 70 84 80				
20	80 70 10 60 10 70					40 90 95 60 90 60					*90 95 96 95 97 93					80 80 88 80 83 85				
21	80 50 05 30 10 02					40 30 30 50 50 20					90 70 85 83 88 88					---				
22	40 60 80 90 70 90					10 10 60 80 90 60					95 90 73 93 95 93					70 93 73 83 83 83				
23	20 90 80 30 10 60					10 90 40 90 90 70					*91 84 84 85 92 86					83 83 83 83 83 83				
24	---					---					*90 60 70 60 82 60					90 85 88 88 88 88				
25	50 60 95 40 05 10					10 02 20 30 70 02					*85 75 80 85 85 85					90 85 90 85 88 88				
26	95 20 50 30 20 01					20 30 10 95 10 01					---					95 95 95 95 95 95				
27	---					30 60 10 80 60 20					93 85 90 90 93 90					90 85 80 85 90 90				
28	40 05 20 50 40 30					10 20 10 20 40 02					*50 50 50 50 75 75					95 90 30 43 83 83				
29	10 20 10 90 93 30					01 20 50 30 90 10					93 93 93 90 93 93					83 86 85 85 84 88				
30	10 80 20 70 60 50					10 30 10 30 50 60					*90 90 90 90 90 90					90 88 88 90 85 88				
31	01 60 40 90 90 20					35 40 80 40 95 50					95 75 75 65 65 65					90 88 85 90 80 90				
32	30 85 60 50 40 60					80 05 90 80 80 50					*80 80 90 90 94 95					70 70 70 81 85 85				
33	80 25 95 80 70 70					40 40 70 90 40 30					---					80 85 65 75 75 75				
34	90 90 20 20 02 70					95 90 02 40 20 02					85 85 80 80 83 82					85 88 85 87 80 87				
35	10 75 30 30 30 95					---					*85 80 80 80 80 90					83 73 75 75 78 75				
36	70 20 90 60 80 70					40 60 30 70 30 70					85 85 90 84 88 85					85 75 75 85 80 85				
37	90 20 20 05 30 30					70 30 05 30 50 01					*85 90 95 90 90 95					95 85 90 95 93 93				
38	30 20 10 60 70 90					90 50 30 98 95 20					*80 85 75 80 85 85					93 86 88 80 78 80				
39	---					80 50 90 80 01 01					85 84 84 86 86 86					90 88 90 80 85 85				
40	80 01 10 05 05 10					70 01 02 20 30 01					---					93 83 83 88 88 88				
41	---					10 40 70 40 40 20					80 80 83 73 73 60					80 80 80 80 78 78				
42	10 70 60 30 10 90					02 20 10 20 20 02					83 75 80 82 87 80					85 90 85 90 81 85				
43	70 80 10 90 60 70					70 30 20 30 30 30					---					78 80 80 85 85 85				
44	30 40 30 20 70 50					30 20 20 60 80 20					*80 85 80 80 80 80					83 85 85 80 80 93				
45	10 20 10 60 70 20					01 20 80 70 10 30					79 82 82 87 87 85					80 85 70 60 85 78				
46	70 40 40 80 90 80					80 90 30 60 80 90					93 90 90 94 95 94					80 80 83 90 85 85				
47	70 60 30 05 50 20					80 05 02 30 20 50					*95 95 85 90 85 90					85 80 88 73 75 75				
48	70 05 10 90 20 20					40 01 10 02 40 02					*80 80 90 70 80 80					85 83 78 75 75 75				
49	95 70 60 60 50 05					40 20 05 30 10 90					93 80 95 85 87 95					97 90 98 88 88 88				
50	10 40 60 30 30 60					01 20 70 70 30 70					73 83 75 78 28 75					80 80 80 75 75 85				
51	40 90 50 70 95 70					50 40 10 05 20 10					---					80 80 80 80 80 80				
52	80 70 20 05 05 30					30 70 30 20 25 01					95 85 85 85 85 85					71 90 50 88 85 85				
53	40 60 70 20 60 20					10 98 70 05 60 80					---					80 71 61 55 73 80				
54	---					90 05 20 30 07 01					*87 87 87 87 87 87					93 90 70 50 60 80				
55	40 20 70 80 50 50					80 20 10 05 60 01					---					93 90 80 70 50 60				
56	---					90 40 10 20 90 20					70 80 80 83 90 90					95 95 95 70 75 85				

Dash indicates no data returned
Asterisk indicates one rating scale

TABLE VI
FRENCH OUTPOST POPULATION: TEST-RETEST RELIABILITY
AND INSTRUCTOR RATING SCALE AGREEMENT

Subjects	Test						Retest						Average Difference						Average Instructor					
	Achievement	Overlance	Persistence	Conscientiousness	Adaptation	Self-activeness	Achievement	Overlance	Persistence	Conscientiousness	Adaptation	Self-activeness	Achievement	Overlance	Persistence	Conscientiousness	Adaptation	Self-activeness	Achievement	Overlance	Persistence	Conscientiousness	Adaptation	Self-activeness
F1	50	20	40	30	10	50	50	30	20	30	70	20	*55	75	85	90	70	75	63	75	70	95	80	75
F2	50	40	20	60	10	90	40	20	01	40	20	50	*75	50	70	50	70	95	20	75	63	70	75	80
F3	20	20	50	80	95	70	95	20	20	60	90	70	93	93	93	90	85	93	61	55	65	60	75	66
F4	02	10	10	50	30	20	40	02	01	05	50	05	90	90	90	92	93	70	75	60	75	85	55	85
F5	30	70	05	60	90	60	20	70	05	50	70	70	63	90	80	60	77	80	43	60	40	45	53	70
F6	10	60	50	70	50	50	30	50	50	60	70	30	-	-	-	-	-	-	70	63	73	65	70	60
F7	90	40	20	20	70	70	40	20	60	05	10	30	*85	90	65	90	95	90	80	65	60	20	65	60
F8	40	01	05	10	50	05	10	20	70	20	10	01	93	90	30	50	70	90	90	65	62	15	35	75
F9	20	90	70	80	95	50	20	90	50	95	95	30	*05	90	30	75	95	75	60	65	68	70	60	60
F10	80	95	90	70	60	90	80	99	99	50	40	95	*90	90	90	20	60	00	73	75	57	37	93	95
F11	50	70	30	10	40	00	80	50	30	60	20	50	*90	90	90	95	95	95	65	73	90	80	90	85
F12	30	80	50	20	10	80	30	40	60	60	70	20	75	00	75	13	75	68	90	23	85	93	93	80
F13	95	05	50	60	05	50	70	05	20	60	40	10	*95	95	95	95	90	95	63	65	63	60	50	70
F14	70	20	20	60	50	90	50	10	30	30	50	90	-	-	-	-	-	-	75	63	75	86	85	73
F15	80	20	20	30	50	02	40	20	02	05	05	02	70	60	25	25	20	75	65	60	63	60	75	55
F16	50	70	70	50	20	60	70	70	20	05	20	70	60	60	60	65	85	83	73	30	25	70	60	75
F17	35	05	30	20	80	20	10	70	20	60	10	20	-	-	-	-	-	-	90	35	45	45	45	35
F18	20	40	10	70	20	50	10	20	10	20	10	20	-	-	-	-	-	-	85	70	65	65	65	75
F19	40	40	00	60	30	60	40	50	90	40	20	05	*50	75	25	40	10	20	60	65	50	60	60	65
F20	70	20	20	10	40	30	70	01	00	20	20	00	93	95	83	62	93	93	80	60	75	45	70	65
F21	50	10	10	30	20	50	60	05	02	30	40	02	*80	90	60	55	75	60	60	60	60	60	60	60
F22	80	10	20	30	10	80	90	30	10	30	60	05	-	-	-	-	-	-	80	60	65	65	65	65
F23	70	50	20	70	80	60	80	80	10	60	30	30	*60	90	90	95	65	40	30	25	25	70	70	60
F24	80	40	20	90	80	30	30	50	01	05	70	30	70	80	75	60	90	63	70	55	50	75	60	60
F25	50	50	20	10	30	10	60	90	70	10	05	10	*95	95	95	90	75	95	90	85	90	70	60	60
F26	50	40	50	60	40	95	50	20	20	10	60	30	93	68	95	95	93	93	85	75	60	85	70	75
F27	40	02	02	50	80	20	20	05	10	40	60	05	-	-	-	-	-	-	65	20	05	65	50	45
F28	50	20	50	95	40	70	60	40	10	90	80	70	-	-	-	-	-	-	60	25	25	50	65	60
F29	-	-	-	-	-	-	80	20	20	30	30	50	33	90	90	93	93	93	55	45	15	75	75	75
F30	40	10	20	30	30	01	41	05	20	30	40	20	*95	80	75	25	65	85	75	60	80	40	55	30
F31	60	05	02	40	60	60	95	30	02	20	70	60	75	63	75	90	90	63	63	40	35	73	63	63
F32	40	40	70	40	60	30	70	05	70	95	95	30	*60	90	60	85	15	95	85	80	85	90	23	05
F33	80	20	20	40	10	30	30	30	30	80	80	70	*90	90	90	77	70	23	85	82	20	73	73	75
F34	20	20	30	70	90	30	20	40	30	90	60	80	62	80	80	90	93	58	60	73	55	88	93	85
F35	40	70	90	80	30	30	30	90	20	80	90	20	*90	85	85	20	85	35	60	60	55	40	45	43
F36	00	40	00	70	90	02	90	01	20	30	95	01	*65	70	90	90	90	90	80	80	25	70	70	90
F37	60	70	80	30	10	90	50	05	20	20	05	20	93	93	93	89	91	25	70	55	60	40	50	43
F38	40	10	50	20	17	40	99	50	50	70	80	95	85	80	80	80	85	55	60	45	68	55	65	60
F39	-	-	-	-	-	-	50	90	50	60	10	05	75	90	-	85	-	90	-	-	-	-	-	-

Dash indicates no data returned
Asterisk indicates one rating scale